

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/30471

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F41A 3/12
 US CL : 42/16, 17; 89/17

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 42/16, 17, 18, 20; 89/17

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 BRS text search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4, 942, 802 A (STONER) 24 July 1990 (24. 07.1990), see Figs. 7-8 and associated written description	1-5
X	US 3, 996, 684 A (BAUMAN ETAL.) 14 December 1976 (14.12.1976), see Figs. 4-8 and associated written description	1-5
X	US 3, 728, 939 A (WILHELM) 24 April 1973 (24.04.1973), see Fig. 1 and associated written description	5
X	US 4, 617, 749 A (JUREK) 21 October 1986 (21.10.1986), see Fig. 10 and associated written description	5

<input type="checkbox"/> Further documents are listed in the continuation of Box C.	<input type="checkbox"/> See patent family annex.
* Special categories of cited documents:	
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"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search	Date of mailing of the international search report
13 January 2004 (13.01.2004)	26 FEB 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Stephen M. Johnson Telephone No. (703) 306-4158